

REMARKS

Claims 1-43 are pending in this application. Claims 25-43 have been withdrawn. Claims 2 and 9 have previously been cancelled without prejudice. Claims 1, 3-8 and 10-24 remain for examination. Claims 1, 3-8 and 10-24 have been rejected under 35 U.S.C. §103. Claim 1 has been amended. Claims 3, 4, 6 and 8 have been amended to correct dependencies. Claims 44-54 have been added. No new matter has been added. Reexamination and reconsideration are respectfully requested.

Rejection Under 35 U.S.C. §103

The Examiner has rejected Claims 1, 3-5 and 19-24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Wohlfahrt et al in view of Kenan et al. This rejection is respectfully traversed. However, in order to further clarify and distinguish embodiments of Applicant's invention over the cited art and pass the claims to allowance at an earliest possible date, Applicant has amended Claim 1. No new matter has been added.

As amended, Claim 1 now recites a method for formulating an enzyme comprising, *inter alia*, screening the colonies for desirable properties by determining whether the colonies contain active glucose oxidase, wherein determining whether the colonies contain active glucose oxidase includes measuring a concentration of the glucose oxidase. Support for the amendment to Claim 1 may be found in the specification as originally filed at, *inter alia*, page 13, lines 9-10. These features are not disclosed or suggested, individually or in combination, in Wohlfahrt et al or Kenan et al.

Wohlfahrt et al is directed toward using certain structures of the glucose oxidase enzyme as a basis for modeling substrate complexes. As acknowledged by the Examiner, Wohlfahrt does not disclose or suggest a method for generating a cDNA library and selectively screening for active mutant glucose oxidase genes that are resistant to peroxide. In addition, Wohlfahrt et al does not disclose or suggest measuring a *concentration* of the glucose oxidase.

Similarly, there is no disclosure or suggestion in Kenan et al of measuring a concentration of the glucose oxidase. Kenan et al is directed toward an explanation of screening processes to form combinatorial libraries. Kenan et al discloses that libraries are typically screened by hybridization to a specific probe, by affinity partitioning, or by covalent modification. However, nowhere does Kenan et al disclose or suggest that screening may include measuring a concentration of glucose oxidase as claimed by Applicant.

Accordingly, the are features of Claim 1 that are not disclosed or suggested, individually or in combination, in either Wohlfahrt et al or Kenan et al. Thus, the combination of these references cannot disclose or suggest all of the features of amended Claim 1. Applicant, therefore, respectfully submits that a *prima facie* case of obviousness has not been made with respect to Claim 1. Claim 1, and Claims 3-5 and 19-24, which depend either directly or indirectly from Claim 1, are, therefore, allowable over the references cited by the Examiner.

The Examiner has rejected Claims 6-8 under 35 U.S.C. §103(a) as being unpatentable over Wohlfahrt et al in view of Kenan et al and further in view of Bylina et al. As stated previously, Applicant has amended Claim 1, from which Claims 6-8 directly or indirectly depend.

With Claim 1 having been amended, Claims 6-8 recite features not found in Wohlfahrt et al or Kenan et al, individually or in combination. In addition, Claims 6-8 recite features not found in Bylina et al. Bylina et al is directed toward an instrument and method for screening microcolonies of cells expressing mutated enzymes. In Bylina et al, microcolonies are screened for desired properties after genes in the microcolonies have been mutated by a variety of methods. However, Bylina et al does not disclose or suggest mutating a gene into a gene that is peroxide resistant. Bylina does not discuss peroxide at all, and does not disclose or suggest incubating directly in peroxide a gene for which a desired property is being peroxide-resistant. In addition, Bylina et al does not disclose or suggest screening by measuring a concentration of glucose oxidase as claimed by Applicant.

Accordingly, the are features of Claims 6-8, which depend either directly or indirectly from Claim 1, that are not disclosed or suggested, individually or in combination, in either Wohlfahrt et al, Kenan et al or Bylina et al. Thus, the combination of these references cannot disclose or suggest all of the features of Claims 6-8. Accordingly, Applicant respectfully submits that a *prima facie* case of obviousness has not been made against Claims 6-8 and these claims are, therefore, allowable over the references cited by the Examiner.

The Examiner has rejected Claims 10-18 under 35 U.S.C. §103(a) as being unpatentable over Wohlfahrt et al in view of Kenan et al and further in view of Shtelzer et al. As stated previously, Applicant has amended Claim 1, from which Claims 10-18 directly or indirectly depend.

With Claim 1 having been amended, Claims 10-18 recite features not found in Wohlfahrt et al or Kenan et al, individually or in combination. In addition, Claims 6-8 recite features not found in Shtelzer et al. Shtelzer et al is directed toward an optical biosensor based upon glucose oxidase immobilized in sol-gel silicate matrix. In Shtelzer et al, the glucose oxidase enzyme is stabilized by simply entrapping the enzyme in a forming silicate gel. (Shtelzer et al, page 300). The Examiner asserts that Shtelzer et al teaches that glucose oxidases are susceptible to peroxide dependent inactivation and that peroxide instability is one problem in using the glucose oxidase enzyme in a biosensor. However, Shtelzer et al offers no method by which to counter this instability except by immobilizing the enzyme in a gel. In particular, Shtelzer et al does not disclose or suggest determining whether colonies have peroxide resistant properties by incubating the colonies in peroxide as claimed by Applicant. In addition, Shtelzer et al does not disclose or suggest screening by measuring a concentration of glucose oxidase as claimed by Applicant.

Accordingly, the are features of Claims 10-18, which depend either directly or indirectly from Claim 1, that are not disclosed or suggested, individually or in combination, in either

Wohlfahrt et al, Kenan et al or Shtelzer et al. Thus, the combination of these references cannot disclose or suggest all of the features of Claims 10-18. Accordingly, Applicant respectfully submits that a *prima facie* case of obviousness has not been made against Claims 10-18 and these claims are, therefore, allowable over the references cited by the Examiner.

Also, Claims 44-54 have been added. Claims 44-54 find support in the specification as originally filed. No new matter has been added. Claims 44-47 depend directly from Claim 1 and are allowable over the art cited by the Examiner for at least the same reasons as Claim 1 as discussed above. New independent claim 48 and new dependent claims 49-54 are also believed to be allowable over the art cited by the Examiner for at least the same reasons as Claim 1 as discussed above.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-0872. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-0872. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-0872.

Respectfully submitted,

Date 3-17-04

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Rajiv Shah, et al.

Title: METHOD FOR FORMULATING A
GLUCOSE OXIDASE ENZYME WITH
A DESIRED PROPERTY OR
PROPERTIES AND GLUCOSE
OXIDASE ENZYME WITH THE
DESIRED PROPERTY

Appl. No.: 10/035,918

Filing Date: 12/28/2001

Examiner: Yong D. Pak

Art Unit: 1652

CERTIFICATE OF MAILING

Commissioner for Patents
P.O. Box 1450
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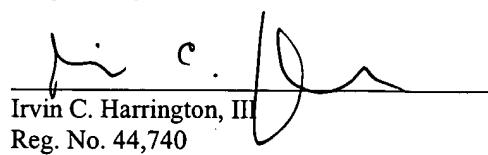
I hereby certify that the following paper(s) and/or fee along with any attachments referred to or identified as being attached or enclosed are being deposited with the United States Postal Service as First Class Mail under 37 C.F.R. § 1.8(a) on the date of deposit shown below with sufficient postage and in an envelope addressed to the Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450.

1. Amendment and Reply Under 37 C.F.R. § 1.111
2. Amendment Transmittal
3. Check No. 827458 (\$162) for added claims
4. Postcard

Respectfully submitted,

March 17, 2004

Date


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